COINCIDENTAL COGNITIVE CONTENT*

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Section 1

A person can have the same idea in different ways on different occasions. This is a remarkable fact about cognition. Someone might, for example, vividly depict in her memory or graphically describe in her diary what once she perceived. She would thereby think the same thought in manifestly different ways. For she would not, perhaps could not, confuse her remembering or describing with the perceiving they recall. And this although, by assumption, what she depicts and describes is the same as what she perceived. How can this be? What distinguishes a person's different kinds of thoughts of the same object as qualified in the same way, such that the differences among the thoughts are phenomenologically manifest or immediately apparent to her?[1]

Some thoughts are manifestly sensuous. All perceptions are paradigmatically so. Some memories of the past and projections of the future are also sensuous, presenting colors and configurations, textures and tastes as they are in perception. Some thoughts are manifestly contemplative or nonsensuous. Thoughts achieved solely through the use of a conventional language are, including, for example, even some memories and projections. What, then, in the nature of a

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1 Germane to many of the theses of this essay is Thomas Nagel's "What is it Like to be a Bat?," *Philosophical Review*, 83 (1974), 435-450.

person's occurrent thought makes manifest to her that her thought is sensuous or contemplative, as it may be? Moreover, what in a person's manifestly sensuous thought displays to her whether it is a perception, memory or projection? And yet, despite the drastic differences among the various kinds of thoughts, how can they coincide in their content?

Section 2

To answer these questions we must embed them in some general theory of thought. Here, tentatively and attentive to arguments from the literature, let us adopt a version of the representational theory of the mind as an edition of neo-cognitivism.[2] To think, then, is to use a vehicle of representation, just as to speak is to use a series of words. To perceive that the ball is white, round and scuffed, I must use something to represent the ball as white, round and scuffed. But also when contemplating, in the absence of the ball, that it is white, round and scuffed, I still must use something to represent the ball as white, round and scuffed. Here we limit our inquiry to thoughts that represent what is true or false,[3] supposing that the structure of vehicles of thought are propositional or sentential. This, however, is only to assume that declarative sentences express what the vehicles of cognition

2 On behalf of representationalism see Jerry A. Fodor, *The Language of Thought* (New York: Thomas Y. Crowell Co., 1975) and also his "Methodological Solipsism Considered as a Research Strategy in Cognitive Psychology," *The Behavioral and Brain Sciences,* 3 (1980), 63-109 (including peer reviews and Fodor's replies); and Gilbert Harman, *Thought* (Princeton: Princeton University Press, 1973). For opposing arguments see Daniel C. Dennett, *Brainstorms* (Montgomery, Vermont: Bradford Book, 1978), pp. 90-108; and Patricia Smith Churchland, "Language, Thought, and Information Processing," *Nous,* XIV (1980), pp. 147-170. Also compare Gottlob Frege, "The Thought: A Logical Inquiry," *in Essays on Frege,* ed. E. D. Klemke (Urbana: University of Illinois Press, 1968), pp. 507-35. These ideas have a long history. See Plato's *Meno,* Augustine's *De magistro* and Ockham's *Summa totins logicae.*

3 Compare Héctor-Neri Castañeda, *Thinking and Doing* (Dordrecht: D. Reidel, 1975) and Jaakko Hintikka, *Knowledge and Belief* (Ithaca, New York: Cornell University Press, 1962).

represent. Cognizant of Wittgenstein's complaints,[4] we presently leave unspecified the exact relation between conventional languages and vehicles of thought, allowing that instances of selected kinds of vehicles of thought may, in fact, be tokens of conventional language sentences. We will, however, take declarative sentences as our model for the vehicles of cognitive representation. For heuristic purposes at least, we can think of these cognitive vehicles as mental sentences. Finally, and still without argument, let us endorse materialism, assuming that vehicles of thought are physical.

Now the investigation begins to take shape, for mental sentences presuppose a mental language or languages. Our task consequently is to examine the mental language or languages of thought. It follows from postulating representationalism and a mental language or languages that instances of thought conform to linguistic categories. Thus, once we construe the vehicles of cognition as declarative mental sentences, we must recognize referential and predicative elements in cognitive vehicles. And, true to our rudimentary model, we may speak of referential and predicative mental terms. Thus, if an infant actually thinks, it does not, because it cannot, represent its world as a "blooming, buzzing confusion" but rather as referentially and predicatively sorted.[5]

With this modest model available, we can recast our questions. How do a person's mental sentences reveal or make manifest to her that she is thinking sensuously or contemplatively? How do mental sentences display the differences among the various kinds of sensuous and contemplative thoughts? And how can different kinds of mental sentences coincide in what they represent for a person? If we allow that mental sentences that coincide in what they represent

[4] Ludwig Wittgenstein, *Philosophical Investigations*, tr. G. E. M. Anscombe (New York: The Macmillan Company, 1953), Part I, sections 139, 156 and 198-294.

[5] As a result of the referential character of thought, our conceptualization of the world insures that the world be thought of as a world of individuated objects, i.e. the items of cognitive reference. See Peter F. Strawson, *Individuals* (London: Methuen, 1959), pp. 19, 162ff. and 217ff.

for a person are synonymous,[6] then we can rephrase further and question how synonymous sentences can be sufficiently different to reveal to a person the differences in her modes of thought.

Section 3

Let us first investigate the several kinds of sensuous thought. We aim to determine what, to the thinking person, makes them manifestly sensuous as well as what, still to the person, renders them manifestly different kinds of sensuous thought. And this while preserving the possibility of coincidence of content across different kinds of thoughts.

Naturally, we look to perception as the paradigm for sensuous thought. It is a truism, and hence true, that perception is always of sensible qualities. I can perceive a ball as white but not as having been manufactured in Milwaukee four weeks prior to the World Series. Perceptual predicates, the predicative elements in mental sentences occurrent in perceptual thought, attribute only sensible qualities and, in that sense, have a limited semantic range.[7] Like all sentences, perceptual sentences include referential elements. But the referential elements in these mental sentences are thoroughly demonstrative.[8] In perception we think of particular objects

[6] As Quine has demonstrated, synonymy yields its treasures reluctantly. See Willard Van Orman Quine, "Two Dogmas of Empiricism," in his *From a Logical Point of View*, 2nd ed., rev. (Cambridge, Massachusetts, Harvard University Press, 1964), pp. 20-46 and also his *Word and Object* (Cambridge, Mass., The M.I.T. Press, 1960), pp. 26-79.

[7] Of course, the range of sensible qualities may not be as restricted as Aristotle would have it, especially if sensation is, somehow, partially determined by the sensing agent's conceptual scheme. See Wilfrid Sellars, "Empiricism and the Philosophy of Mind," in his *Science, Perception and Reality* (London, Routledge & Kegan Paul, 1963), pp. 127-196; Nelson Goodman, *Ways of Worldmaking* (Indianapolis: Hackett Publishing Co., 1978) and Paul M. Churchland, *Scientific Realism and the Plasticity of Mind* (Cambridge: Cambridge University Press, 1979).

[8] See Romane Clark, "The Sensuous Content of Experience," *Nous*, 7 (1973), 45-56; and also his "Old Foundations for a Logic of Perception," *Synthese*, 33 (1976), pp. 75-99; and J. Christopher Maloney, "A New Way Up from Empirical Foundations," *Synthese*, 49 (1981), pp. 317-335.

solely as particular subjects of sensible qualities, regardless of the descriptions they uniquely satisfy or the names they might bear. Strictly speaking, I cannot say that I see that *the ball* is white, though I might so believe on the basis of what I do perceive and happen to know. Rather, I may, and at best, say that I see that *this* is white. You, reporting my perception, may say that I see that *it* is white or that *the ball* is white. But I, the perceiver, secure cognitive contact with the white ball first by demonstrating something as white. It is only subsequent to my so perceptually demonstrating that I can come to know what I perceive to be the ball. Only after securing demonstrative cognitive contact with the ball in perception, can I see that *it,* what I see and subject to cognitive processing, is a *ball.* So my reporting that I see that *it, the ball,* is white is actually a report, not of a simple perceptual act, but rather of cognitive computations based, in one part, on the simple demonstrative perceptual occurrence and, in another part, on what I happen independently to believe about what, in the given context, I perceive. So, to perceive is to refer demonstratively in the language of thought. Perception is a kind of ostension, and, consequently, a perceptual mental sentence must include a vehicle of demonstrative reference. Perceptual mental sentences, then, are exhausted by their mental demonstratives and mental predicates.

This semantic economy is not peculiar to perception. Sensuous thought generally exhibits the same representational paucity. When I sensuously remember, when, as it were, I enjoy a mnemonic image,[9] I think of a particular thing as a particular thing as sensibly qualified. This occurs when I recall what I perceived exactly as I perceived it. The same also seems true for purely sensuous projections, sensuous

[9] I do not want to insist that sensuously to remember is cognitively to deploy a mental image. Rather, sensuous memory may involve the use of some cognitive structure, perhaps, but not necessarily, a mental image, as a mental, possibly hieroglyphic, sentence. Compare Fodor, 1975, pp. 174ff; Dennett, 1978, pp. 174-189; and Stephen M. Kosslyn and James R. Pomerantz, "Imagery, Propositions, and the Form of Internal Representations," *Cognitive Psychology,* 9 (1977), pp. 52-76.

thoughts, predictions or not, of the future. Nevertheless, there must be a radical phenomenological difference among a person's perceptual, sensuous mnemonic and sensuous projective mental sentences, manifesting to the person their perceptual, mnemonic and projective character. Otherwise, how could we noninferentially know, as we do, that we are, for example, sensuously remembering rather than perceiving?[10]

Our emerging model of thought suggests an answer. Mental sentences, we have it, require a mental language; different kinds of mental sentences may require different kinds of languages. Attempting to account for the diverse phenomenological character of the various kinds of sensuous thought, we might abductively argue or hypothesize that perceptual mental sentences differ from sensuous mnemonic and projective mental sentences by virtue of belonging to a mental language different from the mental language of sensuous mnemonic and projective mental sentences. The plausibility of this hypothesis depends on how well, in our developing model, it fits our knowledge of both sensuous thought and conventional language.[11] Let us look, then, to the details.

[10] Models of the mind from artificial intelligence may not need to appeal to any phenomenological difference among the relevant sensuous mental sentences to occurrent sensuous thoughts. Here we cannot investigate such theories. But compare Ned Block and Jerry A. Fodor, "What Psychological States Are Not," *Philosophical Review*, 81 (1972), pp. 159-181; Dennett, 1978, pp. 149-173; and Block, "Troubles with Functionalism," reprinted in his *Readings in Philosophy of Psychology*, I (Cambridge, Massachusetts: Harvard University Press, 1980), pp. 268-306.

[11] As is the way with hypothesis formation generally, other hypotheses, consistent with our version of representationalism, may also serve equally well to exhibit the phenomenological differences among the several kinds of sensuous thoughts. So, for example, we might fruitfully conjecture that the phenomenological distinctions among the kinds of mental sentences occurrent in the different kinds of sensuous thoughts are based not on a plurality of utilized mental languages but rather on a variety of syntactic types of tokens, all within the same mental language. Accordingly, the manifest difference between perceiving and sensuously remembering, say, that this is white would fall to a syntactic difference between the perceptual and mnemonic mental tokens of 'this is white'. The difference between the mental tokens would, then, be akin to two English tokens of 'this is white' printed in differently colored inks or different fonts. But this and other alternatives that may come to mind we must leave for another occasion.

If the various kinds of sensuous thought are distinguished by different kinds of mental languages, then to be able to think in these severally sensuous ways is to be mentally multilingual. To be conventionally multilingual is to be able not only to translate some conventional languages into one another but also, and importantly, *to use* sentences in the various conventional languages as overt vehicles of representation. That is, if I am fluent in both Latin and Spanish, then I can both translate sentences of the one into the other and also use sentences of either language without first translating them into sentences of any other language, even if my native language is neither Latin nor Spanish. Moreover, my fluency insures that I immediately recognize the conventional language to which a sentence I may use belongs. The conventional sentences itself displays or makes manifest to me the language to which it belongs without containing an assertion that points to or shows membership in its encompassing language. Sentences in different languages are, for the pragmatic purposes of communicative commerce, synonymous if translatable. So, to recognize synonymy spanning languages is merely to translate.

These familiar facts of conventional languages fit the phenomena of sensuous thought. Occurrences of different kinds of sensuous thoughts, occurences of different kinds of sensuous mental sentences, correspond to occurrences of conventional sentences in different languages. The ability to think in a particular sensuous way is analogous to the ability to use a particular conventional language. Sensuous thoughts, sensous mental sentences, display their kinds to a thinker in just the way that conventional sentences display the language to which they belong to a person who uses them. When I sensuosly remember or project what I have perceived or may perceive, I am using, in one mental language, a mental sentence, which I can translate into a different mental sentence in another mental language.

Now, conventional languages are, in fact, syntactically distinguished, different conventional languages being individuated by virtue of consisting of different sets of terms and

legitimate combinations thereof. Much the same may function to individuate different mental languages. For mental languages, like all languages, consist of terms and their combinations. And the terms of mental languages presumably consist of specified physiological states of the thinking person. Thus, the mental languages of perception and sensuous memory, and sensuous projection likely consist of different kinds of physiological, neural, states of thinking persons. This because perceiving, sensuously remembering and sensuously projecting doubtlessly require the participation of different neural components that, when activated, constitute physically and, thus, syntactically different kinds of mental terms congealing into different mental languages.

We have now made some progress toward distinguishing the various kinds of sensuous thoughts while explaining how it is possible to think the same sensous thought in different ways. However, it remains for us to explain what makes these now distinguished kinds of sensuous thought all sensuous. What makes perceptions, sensuous memories and sensuous projections species of the same genus? What insures that these kinds of thought are sensuous rather than contemplative?

We can find our answer in our model. Latin and Japanese, as conventional languages, are in great part mutually translatable. This semantic connection between the two languages holds also between Latin and Spanish. But Latin and Spanish are members of the family of Romance languages, whereas Japanese is not. Latin and Spanish share not only the greatest part of their alphabets but also considerable morphemic and syntactic structures. Just as the various Romance languages form a family, so too do the various sensuous mental languages. A person fluent in the Romance languages as well as in Japanese recognizes the family resemblance of, say, Latin and Spanish sentences to one another but not to Japanese sentences. So too, a person fluent in the several sensuous mental languages as well as in (what, we shall see, is) a contemplative mental language recognizes the family resemblance of, say, perceptual and sensuous mnemonic mental sentences to one another but not to contemplative mental sentences.

This growing analogy so far only postulates but does not expose the common lineage of sensuous mental languages. Families of conventional languages, as we know them, typically arise from a single language or common stock of languages. To be true to our model, we must locate a mental language counterpart to Latin that raises its mentalistic progeny from its vocabulary and syntactic structure. So, with an eye to classical empiricism, we look to the language of perception to trace the family tree of the sensuous mental languages.

Languages, conventional or mental are representational. That is, sentences have interpretations in languages. So, for every sentence, *S*, in a language there is an interpretation, *I*, of *S*. We might as well say that within its language *S* represents or means *I*. This remains innocent enough as long as we are not committed to any particular view regarding the nature or status of the interpretations or meanings of sentences. For present purposes it matters not a bit what sort of thing the interpretation of a sentence might be, be it a proposition, eternal or ephemeral, or a sentence,[12] token or type, a number, numeral, or anything whatsoever. But we must recognize that sentences, conventional or mental, have interpretations. If so, we can construe conventional and mental sentences as the values of operators applied to interpretations. To make the same point differently, we might think of Latin as an operator, *L*, that takes different interpretations into Latin sentences. For example, if 'All Gaul is divided into three parts' is the interpretation of *'Gallia est omnis divisa in partes tres'*, then *L* ('All Gaul is divided into three parts') = *'Gallia est omnis divisa in partes tres'*. Generally, then, where *I* is an interpretation of a Latin sentence *S*, $L(I) = S$.[13]

[12] For example, a sentence or a nominalization thereof may even be its own interpretation.

[13] This ignores ambiguity. The value of L(I) is really a sentence paired with its disambiguating context. We can set aside the question of what may be the context of a sentence and treat reference to context as implicit. See Israel Scheffler, *Beyond the Letter: A Philosophical Inquiry into Ambiguity, Vagueness and Metaphor in Language* (London, Routledge & Kegan Paul, 1979).

The sensuous mental language of perception, like Latin, is an operator, *P*, taking what perceptual mental sentences represent, their interpretations, into perceptual mental sentences. Thus, if *A*, whatever interpretations be, is the interpretation of some perceptual sentence *S*, then *P(A)* = *S*. Perceptual mental sentences are manifestly perceptual by virtue of being the values of *P*.[14] These mental sentences are manifestly perceptual for a perceiver, just as Latin sentences are manifestly Latin to a speaker of Latin. The very syntactic, physical structures constituting the language of perception, by virtue of constituting a unique kind of language of thought, display to persons using such structures the perceptual character of their cognitive occurrences.

'P(A)' is a mental, because perceptual, sentence. As a state of a physical person, *'P(A)'* is itself a physical structure. Hence, if some rendition of indirect realism should prove to be an adequate theory of perception, then, as a token of a perceptualese type, *'P(A)'* would be a token of a neurological type. Accordingly, one and the same state would have both physical and linguistic functions and descriptions, just as do inscriptions of conventional sentences. However, it would be only by way of its linguistic role that the occurrent neurological structure would be an occurrent perceptual mental sentence. As a physical configuration, *'P(A)'* would have a causal history peculiar to the kinds of neurological events triggered by the interaction of the relevant sensory organs with their environment. Nevertheless, the causal context of *'P(A)'* would be irrelevant to the fact that a person who uses *'P(A)'* perceptually to think recognizes the perceptual character of her thought. This just as the cause of a person's using an English token of 'this is red' is irrelevant to the fact that she recognizes that she is speaking English.

Although we may have appeared to suppose so, nothing said thus far necessarily requires that *'P(A)'* be an internal

[14] To distinguish between the various perceptual modalities (seeing, hearing, etc.), treat P as a schema for different operators, one for each mode of perceiving, each corresponding to a different perceptual mental language.

physical state of the person using *'P(A)'* to perceive, as long as *'P(A)'* is some physical state or structure operant in the person's perceptual occurrence. Indeed, if some version of direct realism should be determined to be an adequate theory of perception,[15] *'P(A)'* would be the very thing, presumably an external physical object as qualified by some sensible quality that it represents. As the interpretation of *'P(A)'*, *A* would be such a structure of object and quality, and *'P(A)'* would be the same as *A* itself. *P*, the language of perception, would then be a semantic operator taking selected structures of objects and qualities into sentences serving as their own interpretations. Certainly, however, nothing here presupposes this view of perceptual sentences. Our model is neutral, then, with respect to competing classical theories of perception.

If the empiricist tradition is sound, the language of perception is the mother of all other mental languages of sensuous thought. My sensuously remembering something as red is my using a mental sentence in the mental language of sensuous memory. This sentence, though not a sentence in the mental language of perception, is itself a construction out of the *sentence* in the language of perception representing the same thing as red. Viewing languages as operators producing sentences when applied to the appropriate kind of arguments, we can see how the language of perception spawns the language of sensuous memory. *M* is an operator taking perceptual language sentences into sentences of the language of sensuous memory. If *'P(A)'* is a sentence in the mental language of perception representing that this is red, then *'M(P(A))'* is a sentence in the mental language of sensuous memory representing the same. Sensuous mnemonic sentences are mutually translatable with the perceptual sentences out of which they are generated because they have the same interpretations at their cores. The very sensuousness of sensuous memory evolves from the sensuous character of perception. For sensuous mnemonic sentences arise from perceptual sentences in much the same way that Spanish sentences emanate from

[15] Compare Clark, 1973 and Maloney, 1981.

Latin sentences. To remember sensuously is to use a sentence in the mental language of sensuous memory, just as to perceive is to use a sentence in the mental language of perception. The manifestly sensuous nature of sensuous memories is a function of the way sentences in the language of sensuous memory are produced from sentences in the language of perception. And the phenomenological difference between perceiving and sensuously remembering is analogous to the difference between Latin and Spanish sentences manifest to a person fluent in Latin and Spanish.

Sensuous projections share their linguistic lineage with sensuous memories. To project sensuously is to use a sentence in a mental language constructed from the mental language of perception. Mimicing our manner with memory, we introduce a language-generating operator, *F*, taking sentences in the language of perception into sentences of a different mental language, the language of sensuous projections. '*F(P(A))*' is a sentence in the mental language of sensuous projection generated from and translatable with '*P(A)*'. Obviously now, sensuous projection owes its sensuous nature to perception, just as French is born into the family of Romance languages because its mother is Latin. Just as perceptual sentences syntactically constitute a unique physical system, so too do both sensuous mnemonic and sensuous projective mental sentences, presumably respectively coinciding with different kinds of neural structures of the remembering and projecting person. As is the case in perception, the syntactic or physical characteristics of sensuous mnemonic and sensuous projective mental sentences manifest their inclusions in peculiar kinds of languages of thought. This accounts for the different distinguishing phenomenological qualia of such sensuous memory and projection.

Traditionally and intuitively, perception seems to be a kind of direct cognitive contact with the world somehow more immediate and intimate than either sensuous memory or projection. Our theory can explain why. Sentences in the mental language of perception are constructed directly from their interpretations under the operation of *P*. Sentences in

the languages of sensuous memory and projection arise, however, from the actions of M and F respectively, not on the interpretations at their mnemonic and projective cores, but rather on *perceptual sentences,* themselves harboring the relevant interpretations. Thus, the derivation and dependence of sensuous memory and projection from and on perception. We can sensuously remember what we have sensuously projected, and conversely, because sentences in the respective mental languages can be produced from the same perceptual sentence. *'M(P(A))'* and *'F(P(A))'* are mutually translatable because each can be translated with *'P(A)'*.[16] The linguistic operator with wide scope occurent in her sensuous mental sentence makes manifest to a person the kind of her occurrent sensuous thought, just as the conventional language of use is manifest to a multilingual person using a sentence in that conventional language. The sensuousness of all sensuous thought resides in the occurrence of P as the linguistic operator with smallest scope in the occurrent mental sentence.

Once these three modes of sensuous thought have been distinguished by a model appealing to selected features of conventional languages, questions arise regarding the distinguishing characteristics of P, M, and F. What insures that these operators yield syntactically distinct languages? What entails that *'P(A)'*, *'M(P(A))'* and *'F(P(A))'* are distinct?

To answer we take our cue from historical linguistics and etymology. One language arises from another, Spanish from Latin, by means of Latin undergoing a physical transformation. That is, Spanish terms, as physical items, can be derived, through the application of etymological laws, from Latin terms, also as physical items. To illustrate the essential idea, let us imagine three languages, L_1, L_2 and L_3, sharing their only morphemic items *'x'* and *'y'* to thereby form a family of languages. Sentences in these languages are trans-

[16] Can we sensuously remember sensuously projecting? If we can, we can utilize a sensuous mnemonic mental sentence of the form 'M(F(P(A)))'. In principle, nothing prevents nesting our mental language operators. In practice, the hardware of the human mind may restrict the syntactic structures we can employ in our sensuous mental languages.

latable if constructed from the same pair of items. Sentences display their membership in a language simply by the kind of configuration of their words. 'xy', $\begin{matrix} y \\ x \end{matrix}$ and '$x\,y$' would be mutually translatable sentences respectively occurring in L_1, L_2 and L_3. The syntactic structures of these sentences reveal to agents fluent in these languages the language to which each sentence belongs. Just as L_1, L_2 and L_3 form three languages in a family so do P, M and F.

Recognizing that confirmation must await major advances in the neurosciences, we can here speculate, consistent with our developing model, that much the same sort of relation binding L_1, L_2 and L_3 serves to relate families of mental languages. We can conjecture that sensuous mnemonic sentences and sensuous projective sentences, both as kinds of physical structures, arise from perceptual sentences, themselves physical structures, as the result of physical processes to which perceptual sentences are subject. That is, just as certain transformation rules take Latin into Spanish sentences, so too laws of neurology determine transformations of the physical structures constituting sensuous mnemonic or sensuous projective sentences. For surely, sensuously to remember or project is to be in a particular kind of physical, probably neural, state. And such a kind of state will be the result of processes somehow etiologically tethered to some physical state encoding the occurrence of some perceptual occurrence.[17] And that is just what our conjecture says

[17] Arguments regarding functionalism are relevant here. Compare Hilary Putnam, *Mind, Language and Reality* (London: Cambridge University Press, 1975); Jaegwon Kim, "Physicalism and the Multiple Realizability of Mental States," in Block, 1980, pp. 234-236; Block and Fodor, 1972; Sydney Shoemaker, "Functionalism and Qualia," *Philosophical Studies*, 27 (1975), 291-315; Shoemaker, "The Inverted Spectrum," *Journal of Philosophy*, LXXIX (1982), 357-381; and Churchland, Paul, M. and Churchland, Patricia Smith, "Functionalism, Qualia and Intentionality," *Philosophical Topics*, 12 (1981), 121-145. Our inquiry is, perhaps artificially, limited to human cognition, as opposed to the cognition of other species. So restricted, the present theory is not subject to the charge of cognitive chauvinism, so long as it issues a promissory note to accommodate hypothesized phenomenological differences among the kinds of cognitive occurrences in all conscious species. See Nagel, 1974 and my "About Being a Bat," in preparation.

through reference to what is familiar from historical linguistics and etymology. Put somewhat differently and for heuristic purposes, we can envision ourselves as computers whose transitions among certain kinds of physical states is law governed or fixed by a compiler thereby making us, as conscious computers, treat these states as translations among sentences of different mental languages.

Dreaming and imagining[18] apparently are sensuous ways of thinking that we have so far ignored. Perhaps there are others as well. Regardless of the ways remaining, we can encompass them all at once. A distinct kind, k, of sensuous thinking corresponds to a distinct mental language produced by the operation of a distinct operator, K, applied to sentences in the mental language of perception. Synonymy of sentences across mental languages still depends upon the coincidence of the perceptual sentences at the cores of the sentences in question. The sensuous character of all sentences in any sensuous mental language remains marked by an occurrence of P with smallest scope. So, a perceptual sentence is the heart of every sentence in every mental language of sensuous thought.[19]

Section 4

Sensuous thought is manifestly different from contemplative thought. This, however, is not because contemplative thought lacks the representative powers of sensuous thought. We can contemplatively think of things, perhaps in their absence, as qualified as we sensuously have thought or shall think them to be. Clearly we can contemplatively predicate what we sensuously predicate by using *conventional* language

18 See the works cited in footnote 9.

19 Granting all this, we can realize why it is impossible to imagine or otherwise sensuously think what cannot be perceived. What cannot be perceived cannot be represented by a sensuous sentence in the mental language of perception. That is, there is no appropriate mental perceptual sentence out of which a corresponding sentence in another sensuous mental language can be generated. In the absence of such a sensuous mental sentence, there can be no corresponding sensuous thought.

predicates in *conventional* language sentences. In the standard case, to refer contemplatively is to use a conventional language referential term or phrase. Conventional language demonstratives, unlike other conventional referential devices, refer much in the manner of mental demonstratives occurrent in sensuous mental sentences. Of course, we generally use conventional language demonstratives only in the context of reporting what, on that occasion, we happen sensuously to think. Using conventional demonstratives generally presupposes that the object of conventional demonstration is simultaneously an object of sensuous demonstration. That is, I typically can use 'this is red' and thereby contemplate that this is red, only upon an occasion of also sensuously thinking that this is red.

We can contemplate what we sensuously think, while we sensuously think if we can say what we sensuously think. Moreover, we can say *whatever* we sensuously think; conventional language suffices for expressing what any sensuous mental language can express. The only plausible counterexample to this thesis is a case in which a person might say that she has no conventional predicate available precisely to express the sensible quality of which she is occurrently sensuously aware. She may be savoring a flavor and be at a loss to describe it to you because all of her available conventional predicates are either too general or too narrow to *convey* her present taste. Introducing a new conventional predicate to handle her situation will not help her *communicate* with you on this occasion, and hence, it may seem that she cannot conventionally *express* what she now sensuously thinks. But this is a *non sequitur,* for introducing a novel predicate for the purpose of specifying her present experience is exactly to express in conventional language what she sensuously thinks, despite the fact that she presently fails to communicate with you.[20] The expressive and communicative capacities of a language generally converge. When they do not, they can be

[20] Compare Wittgenstein, 1953, Part I, sections 242-293; Castañeda, "The Private Language Argument," in C. D. Rollins, ed., *Knowledge and Experience* (Pittsburgh, 1963); and Fodor, 1975, pp. 55-98.

reconvened, if the novel predicates become entrenched and thereby come to serve as vehicles of communication. But they can so serve only first by being vehicles of expresion. Consequently, conventional languages have the representational resources of the sensuous mental languages. Hence, if we contemplatively think by using conventional languages, then contemplative thought includes the representational or semantic capacities of sensuous thought.

The manifest phenomenological difference between sensuous and contemplative thoughts, especially those that coincide in representation, falls to the difference between the languages in which the thoughts occur. Sensuous thought is thought that utilizes any language in a variety of mental languages all of the same family. Contemplative thought is thought that utilizes any language in a variety of languages, none of which is within the family of sensuous mental languages. For the languages of contemplative thought are just conventional language.[21] The languages of sensuous thought form a family through their common vocabulary, and this they do not share with conventional languages. A person's sensuous and contemplative thoughts are manifestly different to her in just the way that sentences in two different conventional languages she understands and knows to be from different families of languages are manifestly different to her, even if she realizes that the sentences are mutually translatable. The languages of sensuous and contemplative thought differ, then, as radically and manifestly as do Latin and Japanese, conventional languages differing in their alphabets and, hence, vocabularies.

Contemplative and sensuous thoughts coincide in representation just in case they utilize sentences that are translatable one into the other. A person recognizes coincidence of representational content across occurrences of sensuous and contemplative thoughts by translating the occurrent sensuous and contemplative mental sentences. Thus, in saying what she sees, a person acts as a simultaneous translator. Translators,

[21] Compare Fodor, 1975, and Harman, 1973.

as we know them from their activities at, say, the United Nations, are fallible though knowledgeable. Fallibility of this sort may be deeply embedded in our very selves. We may incorrectly express in a conventional language what we perceive, what we represent in the mental language of perception, translating from true to false or perhaps from false to true sentences. In this way our reports of our present perceptual states are corrigible. Nevertheless, it remains undetermined and perhaps indeterminate how corrigibility arises. Does it spring from incorrectly translating a perceptual mental sentence, which, by the manner acquired, must be true, into a conventional sentence, which, by the manner of its production, may be false? Or does corrigibility emerge from correctly translating into a conventional sentence a perceptual sentence, which, despite the manner acquired, may be false?[22]

Since to contemplate is merely to use a conventional language, a person can contemplate in as many ways as conventional languages in which she is fluent. Hence, speaking English and Spanish literally amount to different ways of contemplating although both are kinds of contemplating. Our model requires, then, that the difference between contemplating in English and Spanish is akin to the difference between perceinving and sensuously remembering. Of course, even if speaking English and Spanish represent different modes of contemplation, such modes can coincide in content to the degree to which English and Spanish, as the conventional languages to contemplation, are translatable.

Variations in fluency within a conventional language amount to variations in capacities to contemplate in the manner defined by that conventional language. In this sense, if we count versions of axiomatized set theory as conventional, because formal, languages, we may then think of variations among people in their abilities to do set theory as, at

[22] Compare Keith Lehrer, *Knowledge* (Oxford at the Clarendon Press, 1974), pp. 80-100. Is a person's own translation scheme connecting her sensuous mental language open to the problem of radical indeterminacy? I assume not, but see Dennett, 1978, pp. 39-52, 90-108 and 149-173 for what may be reasons to the contrary.

least in part, variations in fluency in a particular language of contemplation. Some uses of conventional language involve linguistic mistakes, and thus slips of thought occur as slips of the tongue. There is no more reason to suppose that contemplative thoughts necessarily occur without mishap than there is to suppose that any physical activity in which we engage is insured against failure. And a person who correctly says that she cannot express what she says she thinks is not *contemplating* at all. However, it does not follow that she is not *thinking* at all. For although she could not be contemplatively thinking if she is at a loss for words, she may nevertheless be *sensuously thinking*. She may be thinking in a sensuous mental language and, as we have already seen, only able to translate from her sensuous mental language sentence to a conventional language sentence suitable solely for expression, not communication.

Any overt use of a conventional language counts, then, as an instance of contemplative thought. Thus, speaking and writing English are, as instances of using English, instances of contemplative thought. Notice that spoken and written English tokens of the same term are remarkably different in their physical structure, yet not so different as to fail to be instances of the same English type. But what shall we say of those cases in which a person contemplates without engaging in any overt use of conventional language. By the lights of the present theory, the person must be using tokens of one of the conventional languages she has mastered. Thus, in a sense, she must be 'talking to herself'. How shall we understand this? We already know that, despite gross physical differences, spoken and written English tokens can be of the same English type. Similarly, when a person silently, privately, contemplates, she employs tokens of her conventional language that differ in kind of physical realization from, say, written tokens of the same conventional type. These novel, cryptic conventional language tokens are, we may hypothesize, neural states yet to be specified according to physical kind in terms of neurology. Their physical differences from written tokens of the same type is no more, and only as, interesting as the

physical difference between written and spoken tokens of the same conventional language type. The difference phenomenologically marks the occurrence as a kind of contemplative thought, voiced as opposed to unvoiced, public as opposed to private. And it counts not at all against this proposal to claim that we, as silent contemplative agents, cannot introspectively identify and describe the neural tokens of the public language we privately use quietly to contemplate. For, we can in fact *identify* the neural states that serve as our conventional language tokens in silent contemplation. We can identify any such state by referring to it simply as 'the state I was in when I contemplated that *A*'. Such a description automatically identifies the state in question. Of course, none of us now can *describe* these states using sufficiently selective terminology from neuroscience. But this is not significant. After all, we can all identify the sounds that are audible tokens of the conventional languages we can speak. But few of us could begin to provide descriptions of those sounds suitable for the purposes of audiology. To use a language a person must be able to identify term tokens; she need not be able discursively to describe them using the vocabulary of any putatively proprietary science. Consequently, we are entitled, in terms of our theory of contemplation, to hypothesize that a person's occurrent neural states function as tokens of the public conventional language she privately uses, on that occasion, to contemplate.

Once we recognize that physical structures internal to a thinking agent can function as the agent's language of contemplation, we can easily extend our theory of contemplation so as to recognize the contemplative powers of nonhuman contemplative agents. Intelligent animals are endowed with internal systems of physical states constituting species specific languages of contemplation. Of course, we have no reason to believe, in most cases, that such languages also have a communicative aspect, as do human conventional languages. But this should give us no pause since we have already seen, in the case of humans, that the expressive and communicative functions of a contemplative language can be separated. Re-

lative to species of intelligent animals, then, we simply postulate internally realized physical structures functioning as languages suited for carrying computations, not communications.[23] Attributing a language of contemplation to a species of intelligent animals does not entail that species is as intelligent as humans. For such would be so only if the relevant animal language were as expressive as, fully translatable with, human languages of contemplation. And we now know of no animals to which we should postulate a language of contemplation translatable with any human language of contemplation, any conventional human language.

We have no common or naturally endowed language of contemplative thought, if the multitudinous conventional languages are the languages of contemplation. Since it is incontrovertible that we learn our conventional languages, we must also learn to contemplate. We learn to contemplate by learning a language more expressive than the mental languages of sensuous thought. Learning a conventional language generally involves learning how to translate a novel into a known conventional language. Acquiring one conventional language seems, then, to presuppose possessing another conventional language. So, how could we ever learn our first conventional, so-called natural, language?[24] Beginning to learn a first conventional language is learning to translate from the sensuous mental language of perception into the conventional language. But we do not also learn the mental perceptual language as we learn a conventional language, for it is not a conventional language, a language acquired by adopting a translation scheme.

Although the sensuous mental language of perception is not learned as is a conventional language, it is not, in any strong or interesting sense, innate but acquired. We do not begin to perceive, to think sensuously, only after acquiring the lexicon of the mental language of perception. Rather, we acquire the lexicon by acquiring the mental language, by

[23] Much more needs to be said about this issue. See Fodor, 1975, pp. 55-57 and Dennett, 1978, pp. 106-107.

[24] See Fodor, 1975, pp. 55-79.

using sentences in the mental language of perception. And this we do through the sheer physical operation of our sensory-neural systems. How is this possible? The sensory-neural system is, by its nature, a language using system that generates mental sentences as outputs from sensory inputs. Importantly, this system functions in such a manner that its very production of a mental sentence is its very use of that sentence; it produces by using and uses by producing mental sentences. The sensory-neural system is like a speaking person, whose production and use of a sentence concur. This is why we are thinking systems as opposed to machines, like typewriters, that, given the appropriate causal confluence, can produce, without thereby using, conventional language sentences. We differ from typewriters in yet another and important way. Unlike most purely *conventional* language producing devices, we cannot produce occurrences of *sensuous* mental language items or strings that are not well-formed mental sentences. We are so wired as to produce only grammatically correct, though certainly not necessarily true, sequences or structures of *sensuous* mental language terms.[25]

What substantiates this? All perceptual experiences are attributions of qualities to things; we perceive only and always in structured ways. Even when, for example, a person's visual field is exhausted by a collage of blending colors, she sees something as, say, rose blending into purple. Strictly, she sees that this is rose blending into purple.[26] To say that a person's perceptual field is structured as it is, is to say that she represents the field with a structured, grammatical sensuous mental sentence. Also, it is a simple but characteristic fact of perceptions that whatever we perceive is, if not actually true,

25 This Kantian thesis certainly does not hold for the way we produce conventional language strings. See Quine, "Methodological Reflections on Current Linguistic Theory," in *The Semantics of Natural Languages*, ed. Donal Davidson, and Gilbert Harman (Dordrecht: D. Reidel, 1972), pp. 442-454.

26 See Maloney, 1981 for a discussion of the syntax of sensuous mental sentences. The present point does not require that perceptual mental sentences feature demonstratives in referential position. It suffices that such mental sentence feature any sort of referential mental term, be it a noun, pronoun or bound variable.

possibly true. We can see things as, say, red, but not as both red and nonred. Accordingly, every sensuous mental language string we issue is possibly true and, hence, a well-formed mental language sentence. Finally, we can express, if not communicate, whatever we perceive by translating from a string of sensuous mental language items into a conventional language sentence. Any string of symbols of any language which is translatable into a sentence of another language must itself be a sentence in its own language. Hence, every string of symbols we produce in the sensuous mental language is a sentence in that language.

Noncognitive devices, like typewriters that can produce sentences in a conventional language are generally capable of producing ungrammatical sequences of symbols, jibberish in the extreme. This indicates that even when they do produce sentences, they do not use these sentences. Since nothing, presumably, can use jibberish to think, machines do not. Machines that, given certain causes, can spew nonsense seem to be behaving as designed, just as when they produce sentences. Thus, we have no more reason to suppose that they use the sentences they produce than the symbols they jumble. Consequently, we can continue to maintain that, since we must conform to the mental grammar, we use sensuous mental language sentences simply by producing them. And yet we can deny that every sentence-producing device is a sentence user, a thinker.

We can, of course, design machines, computers, that appear sensitive to linguistic contexts and norms and produce only and infinitely many well-formed sentences in conventional languages. Are these machines like us, using by producing sentences? Do they also think? If we accept that constant conformity to a grammar combined with the capacity appropriately to produce infinitely many sentences is the measure of thought, then these machines are cognitive. This, if it is a price, is a minor one to pay for being able to maintain that we acquire our sensuous mental language through the sheer production of mental sentences. For complex computers, devices which may, like us, acquire their basic computational

languages sheerly by virtue of instantiating their design, are certainly among the things that genuinely may merit membership in the cognitive club.[27]

If we acquire our perceptual mental language by the very production of sentences of that language and produce such sentences because our sensory-neural systems are designed to produce them in response to impinging causal forces, then we do not *ab initio* contain covert mental lexicons on which we draw to produce mental sentences. That is, we need not first know the definitions of perceptual mental predicates in order to apply them in mental sentences. Rather, to recall the classical empiricist metaphor, our lexicons are inscribed, printed, augmented by the operations of our sensory-neural mechanisms. These processes produce structures that are the very mental sentences that we use, and we use these mental sentences solely by being the organisms that produce them. Our perceptual mental language lexicons accordingly grow with time, increasing coincidentally with the generation of sentences displaying novel mental terms.

Definition is a process through which we can extend a conventional language, once we know a fragment of it. However, we do not use definition to augment our perceptual mental language, for we acquire new perceptualese predicates solely by producing perceptual sentences with newly predicated predicates. Mental predicates in the mental language of perception are not defined in terms of one another; they are one and all primitive, undefined.[28] Synonymy does not tether sensuous mental language predicates within a mental language. Mental predicates can, of course, be coextensive, but this results from the laws or accidents of physics, not from the purely semantical features of peroeptual predicates independent of the ways of nature. We may one day be surprised to

[27] We can, perhaps, deny their membership applications by arguing that these machines do not even produce sentences. Rather, we might say that *we* utilize these machines as tools enabling *us* to produce sentences that we otherwise might not. Compare, however, Dennett, 1978, pp. 109-128.

[28] Compare John Locke, *An Essay Concerning Human Understanding*, ed. A.C. Fraser (New York: Dover Publications, 1959), I, pp. 151-157.

learn from science, not semantics, that all and only red things are piquant. And this because our perceptual language predictes for 'red' and 'piquant' are not synonymous.

If the mental language of perceptual thought is acquired in roughly the way we have considered, then different persons may be fluent in different fragments of this language. In particular, different persons will develop different lexicons of perceptual mental predicates, if their sensory-neural systems differ by being designed to react in diverse ways to similar stimuli or to react only to different kinds of stimuli. Or, people may develop different perceptual lexicons, though their sensory-neural systems are basically the same, if they brush against sufficiently different stimuli. Differences in perceptual language lexicons, perhaps especially in their early stages of acquisition, may have dramatic consequences. We may be mental language producing and using devises that entrench some primordially acquired perceptual predicates and thereby preclude the inscription of other perceptual predicates in our personal lexicons. It is consistent with the present theory that we be so designed that if we first acquire the perceptual mental predicate for, say, 'green', we can proceed to incorporate the perceptual predicate for 'blue' but not the perceptual mental predicate for 'blue-or-green'. And if some among us are so designed first to admit the perceptual mental predicate for 'blue-or-green', they may be unable to record the perceptual mental predicates for either 'green' or 'blue'. And so, if our conventional languages are somehow based on our perceptual mental languages, then you and I might use the same conventional predicate while semantically tying it to different, nonsynonymous perceptual mental predicates without hope of realizing that our subsequent conventional conversation blurs our different perceptual perspectives. This, then, may be one of the reasons for both the principled radical indeterminancy of translation schemes between conventional languages of different persons and the possibility of inverted perceptual spectra.[29]

[29] See Shoemaker, 1975, and 1982.

Since on our model, perceptual and contemplative thought involve the use of different mental languages, it is natural to suppose that contemplation emerges from sensuous thought when we frame translation schemes taking us from perceptual mental to codified conventional languages. Thus, to learn a first conventional language is to act as a linguist devising a translation manual.[30] And so, as we acquire our first conventional language, we are subject to the possibility of erring in the same ways that a linguist might.

Though our conventional languages rest on our perceptual mental language, conventional languages typically have greater representational reach than the perceptual mental language, from which they emerge. Contemplative thought transcends the bounds of sensuous thought.[31] So, not all conventional language sentences can be translatable into the perceptual mental language; not all conventional predicates can be paired with sensuous mental predicates. How is this to be explained withing our model?

Language acquisition is still a relatively mysterious phenomenon, but we can venture a few cautious remarks. We are language-using devices whose design enables us to use our sensory states as predicates.[32] But, as the specific kind of device we are, we are also designed to be verbal, to use utterances and inscriptions as predicates. Our designs must then include mechanisms that generate verbal from perceptual predicates.[33] The rules governing these generative mechanisms and how they are embodied is certainly both of paramount importance and beyond the reach of the philosophy of mind unaided by linguistics, psychology, physiology, artificial intelligence and science generally. Nevertheless, it is possible functionally to characterize the generative mecha-

30 Compare Augustine *(De magistro)*, Fodor, 1975, and Wittgenstein, 1953.

31 Contrast Fodor, 1975, p. 97.

32 See J. A. Fodor, T. G. Bever and M. F. Garrett, *The Psychology of Language* (New York: McGraw-Hill Book Co., 1974), pp. 435-504.

33 See Noam Chomsky, *Aspects of the Theory of Syntax* (Cambridge, Massachusetts, The M.I.T. Press, 1965) and Terry Winograd, "Understanding Natural Language," *Cognitive Psychology*, 1 (1972), pp. 1-191.

nism. It semantically ties conventional predicates to other predicates, contemplative predicates to either perceptual predicates or other contemplative predicates. This mechanism can operate in any of several ways, including definition, postulation[34] and metaphor.[35] Linguistic devices that we are, we embody a mechanism through which we are able definitionally to associate utterances and inscriptions with antecedently acquired perceptual predicates. If I have incorporated my sensory state elicited by the redness of objects[36] as a perceptual language predicate, then through my definitional mechanism I may be able to use an utterance or inscription to represent such objects. The utterance or inscription I settle upon is, no doubt, fixed by what has previously transpired withing my linguistic community. My peers use 'red', and so, so do I. Yours, being Spanish, use 'rojo', and so, so do you.

Once the definitional mechanism has generated conventional predicates, it can act on those predicates to produce still other conventional predicates ever more complexly defined. Since it is a definitional mechanism, when, without the assistance of other predicates generators, it produces conventional predicates, they are ultimately definable in terms of pure primitive perceptual predicates.

Not all conventional predicates are definable through primordial perceptual predicates. In this way, contemplative languages abstractly transcend sensuous mental languages. So, we must embody nondefinitional mechanisms through which new arise from old predicates. Presumably, we can produce by postulating predicates. A conventional predicate is postulated if it is associated in lawful but non-definitional ways with other predicates, all, some or none of which may be

34 See Rudolf Carnap, *Meaning and Necessity* (Chicago: University of Chicago Press, 1947, 1956), pp. 222-229 and 233-247.

35 See Max Black, "Metaphor," in his *Models and Metaphors* (Ithaca: Cornell University Press, 1962), pp. 25-47; and also see both his "More About Metaphors," and essays by others in *Metaphor and Thought*, ed. Andrew Ortony (Cambridge: Cambridge University Press, 1979), pp. 19-43. Additionally, see George Lakoff and Mark Johnson, *Metaphors We Live By* (Chicago: University of Chicago Press, 1980).

36 Compare Paul M. Churchland, 1979, pp. 14-29.

primitive perceptual predicates. A postulated predicate is produced, then, through a mechanism which maps a novel, undefined conventional predicate onto a set of predicates such that correct application of the novel predicate semantically sanctions or is sanctioned by application of some or all of the predicates in the associated set. This mechanism is illustrated by 'ϵ' in set theory. Though we do not define 'ϵ', we understand it if we realize how it is lawfully associated with other predicates with which we are, typically, familiar. However, postulation may also enable us to map new predicates onto sets of predicates including new predicates.

Predicate postulation may, then, introduce us at once to clusters of new predicates.

Predicates postulated, we are in the realm of abstract thought, especially when previously postulated predicates occur in the sets of predicates onto which we now map newly postulated predicates. Metaphor too carries us off into abstraction. Our manner of making metaphor is a procedure for using antecedently accumulated conventional predicates in novel ways that, obscurely but somehow, depends on how once we used these now metaphorically tokened terms. Stocked with a set of conventional predicates generated through definition, postulation and metaphor, we can continue to cast our cognitive net ever further. But this we can do only after first having acquired our primitive, undefined perceptual predicates. Then, through the cooperation of definition, postulation and metaphor, we learn conventional words for or otherwise more losely associated with perceptual predicates. Once awash with words, we wade through our generative processes to learn more words still. At last, becoming theorists ourselves, we define, postulate and make metaphors anew until we are afloat with theoretical terms, having swum into the ever deeper and purer contemplative waters of religion and philosophy, literature and science. But our first dip is sensuous.

RESUMEN

Uno de los hechos notables del pensamiento es que una persona puede pensar, en distintas ocasiones, el mismo pensamiento de distintas maneras, quizás para recordar o contar lo que se ha percibido, o para proyectar o predecir lo que se percibirá. En este ensayo presento un fragmento de una teoría filosófica sobre el pensamiento que muestra, considerando la esencia del pensamiento, lo que hace posible que una persona piense el mismo pensamiento de distintas maneras en distintos momentos. La teoría que propongo utiliza el lenguaje como un modelo del pensamiento; postula que distintas clases o especies del pensamiento son clases o especies de lenguajes mentales relacionados lingüísticamente. Estos siguen reglas semejantes a las de los lenguajes convencionales. El modelo aclara las relaciones entre las diferentes clases o especies del pensamiento sensorio e indica la manera en que el pensamiento puramente contemplativo o abstracto puede surgir del pensamiento sensorio.

[*J. C. M.*]